WHAT IS CLAIMED IS:

1. A digital stream conversion apparatus for outputting a digital stream having a packetized format at a rate which is slower than an input rate, comprising:

a time stamp assignment section for assigning, as a time stamp for each packet in an inputted digital stream comprising a plurality of packets, an input time of the packet;

a packet reduction section for deleting deletable packets from the inputted digital stream and outputting remaining packets, wherein the deletable packets are packets which appear in the digital stream with a predetermined repetition pattern;

a time stamp replacement section for, based on a proportion of the deletable packets in the digital stream, replacing the time stamps assigned to the packets outputted from the packet reduction section; and

a packet output section for outputting the packets outputted from the time stamp replacement section, such that each packet is outputted at a time indicated by the time stamp assigned to the packet.

2. The digital stream conversion apparatus according to claim 1, wherein, until positions of the deletable packets among the packets outputted from the time stamp assignment section are ascertained, the packet reduction section is operable to:

if a packet of the same type as the deletable packets is inputted following immediately after a packet of a different type from the type of the deletable packets, delete the packet; and

if packets of the same type as the deletable packets are consecutively inputted, delete any packet in an odd-numbered position among the consecutive packets and output any packet in an even-numbered position among the consecutive packets.

3. The digital stream conversion apparatus according to claim 1, wherein, once the positions of the deletable packets among the packets outputted from the time stamp assignment section are ascertained, the packet reduction section is operable to delete any packets which are in the ascertained positions, and output the remaining packets in the inputted digital stream, regardless of whether the remaining packets are of the same type as the deletable packets or not.

4. The digital stream conversion apparatus according to claim 1, wherein the deletable packets account for a proportion α of all the packets in the inputted digital stream (where $0<\alpha<1$), and

the time stamp replacement section does not perform time stamp replacement for any packet following immediately after a deletable packet, but performs time stamp replacement for any other

packet so that a difference between the time stamp assigned to the packet and the time stamp assigned to an immediately previous packet is β times as large as that before the time stamp replacement (where $1< \beta < 1/(1-\alpha)$).

5. The digital stream conversion apparatus according to claim 1, wherein the time stamp assignment section and the packet output section each use a count value of pulses of a clock signal having a predetermined frequency as a reference of time.

6. The digital stream conversion apparatus according to claim 1, wherein,

the digital stream is a transport stream compliant with the MPEG2 system standard, and

the packet reduction section regards null packets which appear in the transport stream with a predetermined repetition pattern as the deletable packets.

7. The digital stream conversion apparatus according to claim 6, wherein the time stamp assignment section and the packet output section each use, as a reference of time, a count value which is updated with a frequency of 27 MHz, and

if any packet outputted from the packet reduction section contains a program clock reference, the time stamp replacement section adds to the program clock reference contained

in the packet a difference between the time stamp assigned to the packet before the time stamp replacement and that assigned after the time stamp replacement.

8. The digital stream conversion apparatus according to claim 1, wherein the digital stream is a stream obtained by demodulating an analog signal which has been modulated by a QPSK scheme with a code ratio selected from the group consisting of 7/8, 5/6, 3/4, 2/3, and 1/2.

9. The digital stream conversion apparatus according to claim 1, wherein the digital stream is a stream obtained by demodulating an analog signal which has been modulated by a BPSK scheme with a code ratio of 1/2.

10. A digital stream conversion method for outputting a digital stream having a packetized format at a rate which is slower than an input rate, comprising:

a time stamp assignment step of assigning, as a time stamp for each packet in an inputted digital stream comprising a plurality of packets, an input time of the packet;

a packet reduction step of deleting deletable packets from the inputted digital stream, wherein the deletable packets are packets which appear in the digital stream with a predetermined repetition pattern;

a time stamp replacement step of, based on a proportion of the deletable packets in the digital stream, replacing the time stamps assigned to the packets which have not been deleted by the packet reduction step; and

a packet output step of outputting the packets which have been processed by the time stamp replacement step, such that each packet is outputted at a time indicated by the time stamp assigned to the packet.

11. A program for causing a computer to execute a digital stream conversion method for outputting a digital stream having a packetized format at a rate which is slower than an input rate, the method comprising:

a time stamp assignment step of assigning, as a time stamp for each packet in an inputted digital stream comprising a plurality of packets, an input time of the packet;

a packet reduction step of deleting deletable packets from the inputted digital stream, wherein the deletable packets are packets which appear in the digital stream with a predetermined repetition pattern;

a time stamp replacement step of, based on a proportion of the deletable packets in the digital stream, replacing the time stamps assigned to the packets which have not been deleted by the packet reduction step; and

a packet output step of outputting the packets which

have been processed by the time stamp replacement step, such that each packet is outputted at a time indicated by the time stamp assigned to the packet.

12. A computer-readable recording medium having recorded thereon a program for causing a computer to execute a digital stream conversion method for outputting a digital stream having a packetized format at a rate which is slower than an input rate, the method comprising:

a time stamp assignment step of assigning, as a time stamp for each packet in an inputted digital stream comprising a plurality of packets, an input time of the packet;

a packet reduction step of deleting deletable packets from the inputted digital stream, wherein the deletable packets are packets which appear in the digital stream with a predetermined repetition pattern;

a time stamp replacement step of, based on a proportion of the deletable packets in the digital stream, replacing the time stamps assigned to the packets which have not been deleted by the packet reduction step; and

a packet output step of outputting the packets which have been processed by the time stamp replacement step, such that each packet is outputted at a time indicated by the time stamp assigned to the packet.